Missouri Botanical Garden
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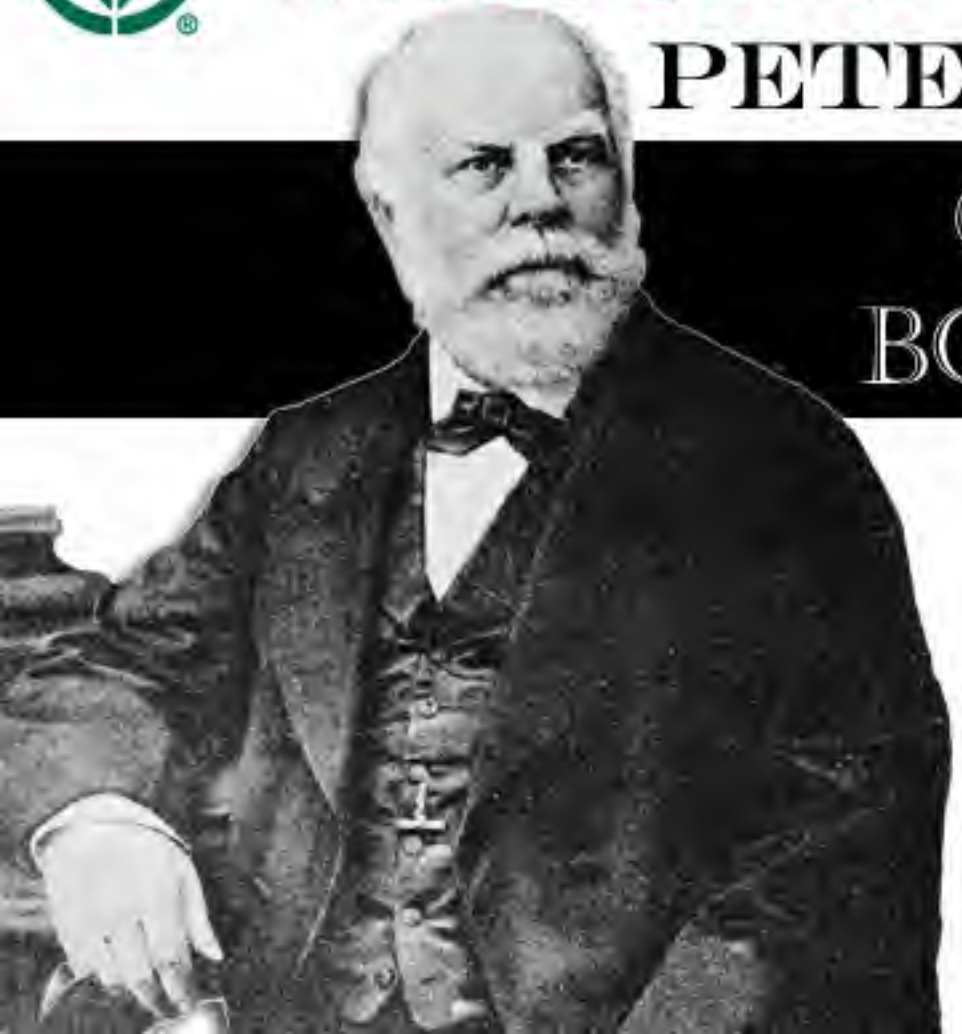
George Engelmann Botanical Notebooks



Pagination Note:
Since many of the items lack a specific page number, the page number displayed online refers to the sequentially created number each item was given upon cataloging the materials.

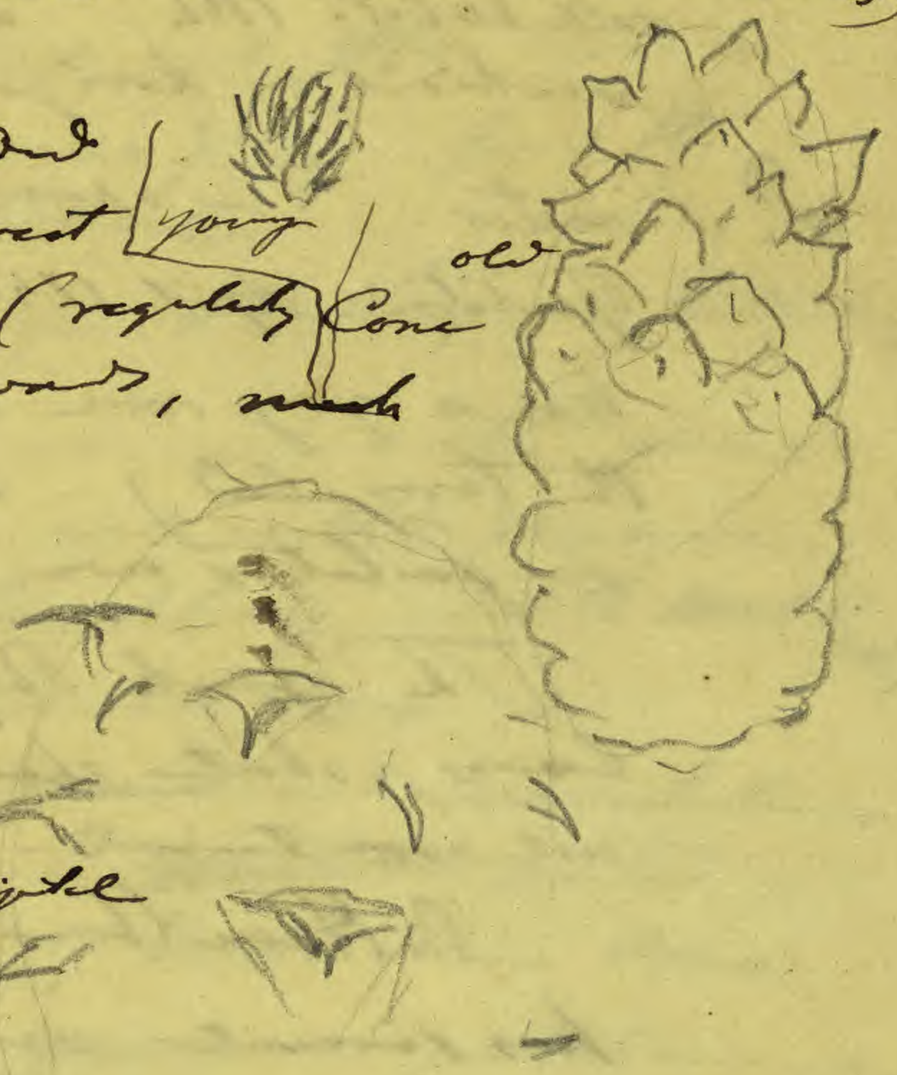
1

Coniferae Herb Mus Florence

Oct 15 - 21 1868

Pinus monophylla Torr. a cultivated specimen from the Garden
at Chiswick, — some of the original leaves, broad
canaliculate, slightly serrate — the single leaves
(secondary) are very long pointed! much like
Torrey's figure.

P. Balfouri, Parlat. (*P. muricata* var?? Balfouri rev)
Mendocino plains
leaves short, thin, rigid, crowded
young cone terminal, with erect spinous scales — old cone (regularly cone
so?) with stout knobs upwards, much
obtuser ones below.



P. muricata.
leaves very long, slender
bun dris 3 rows, 6 ruts long, persistent
Cones sessile Terminal — persistent horizontal
second years — spinous
tips long, upper ones or
most of the recurved
a flowering specimen has a long
spike of short aments — Buds large and very
conspicuous, persistent. — another from Kew
in June is quite similar,

P. purpurea rows sessile persistent — horizontal
P. mitis Canby, May 1866, Maryland
just in flower, female aments evidently not terminal
male aments (pink long (long somewhat persistent.
and somewhat deflexed — Richl's sp. are much stouter
P. Hartwegii Lois (Banksiana Lamb) from
Chicago and from Canada — & Calif.
P. contorta not here!

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11795

Pinus insops — Delaware Canby good specimens of every
form — one is a young shoot, a foot long, with 2 fasc.
aswell one 3 inches from base, and 2 branches with 1,
the other 4 inches from top with 1 branch
Specimen from Dropmore show also the lateral long
persistent cones
Spec. from Jardin de Roy at Angers the same — the cones
are longer, slender with
a more distinct pedunele
coll 20 Oct. 1864 — 3 in a
vertical — horizontal

P. Pinaster a specimen from
Gentili April 1840 "in sylvis Duhedi [?] sub S. Bernardo"
has a very long cone and several branches terminal (below
the term. bud) — sheaths very long.
Dr Parlatores own specimen they are lateral like in mine

The greek Pinaster, from the Olympus has short
cones, shorter sheaths smaller less knobby cones — position
not ascertained.

P. Hamiltonii Jan, Sieb, fide Parlatore, Calabria has
has several verticils of Cones, all lateral —
upper almost Terminal, in a specimen from
Hort Neapol. 1861

Short forms have the cones lateral, but high up —
some others are terminal — especially forma minor
from Pisa
var Lemoniana (Prodr. pag 383) it is said:
"Strobilis terminalibus lateralibusque"
the flowering specimen of P. Pinaster!

P. Halepensis — a specimen from Genoa, "in maritimis Pisanis
also pendulous or recurved
Pinus Syriaca has very short pedunculed Lateral fruit, 2 together
from Hort. Neapl The thick swelling of the axis below the cones is apt to
is exactly the mislead — the slender part of the axis is above
same as is easily taken for a young very short — but the
below

leaves and then sheaths will fall. Numerous specimens show the lateral position of young cones, often low down and mostly scattered, single

"Pinus syriaca ex Damasco" = Hort Bot Neap. = supposed by Tenore (from a note = Herb) to be P. Pithyusa Fox Strangw. — has short pedunculed cones, spreading, not at all reflexed — and is distinguished by the very long, straight (not) crate scales of the young shoots

P. Pyrenaica Lapeyr. the form named Parolinii is here with as it seems to me distinctly Laricio — & has terminal cones (Hort Parolini, Bassano) — from the Bot Garde de Florence retaining Laricio

var Brutia (Tenore) for H.B. Neap. = Laricio

P. montana Duroi, one of the forms of var uncinata are very distinct and remarkable and well deserve that name — specimens from Lanesborg, near the Mont Cenis

P. Laricio Poir, Corsica, with terminal cones — male aments are slender & small and somewhat resemble in size those of P. [redacted] sylvestris. Scales are soon deciduous, but their base remains as a rounded concave protuberance & cones have leaves very slender (var P.)

P. resinosa Soland.

P. Banksiana Lamb & Jurs, terminal cones; male aments oval, small in a spike 1—2½ inches long, their scales deciduous, base remaining. Cone much like that of P. sylvestris

P. Thunbergii Parlat. n sp. Stout plant, stout long leaves rather like Picea longest sheaths — Scales of long cone woolly and quite deciduous, leaving only smooth cones with rather even scales

P. Massoniana Lamb [= probably my slender densiflora] long spike of short cones — Specimens from China have shorter more slender cones — one from Japan much longer my — is it the same?

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P. Hasya Royle – leaves slender, long, cones terminal

P. Longifolia Royle slender (Hab Nepal also)

P. Gerardiana Wall ex Hort. Kew short and stout leaves

P. Sabiniana

P. Coulteri, fine pl. specimen from Kew old at the English Gardens – Branch of male fl. and of leafbuds long, brown slightly frosted brown

P. australis – I see no specimens!

P. Jeffreyi Murr. Garden of Standish & Bagshot and That of . . . at Fulham might be ponderosa from size & shape of leaves almost like Pseudo — only leaves here ?

P. Pseudo L. – good sp. from Canby in flower &c

P. densiflora Hartw a leaf specimen from Chiswick similar to next – perhaps leaves a little longer.

P. virginiana good sp. from Canby

P. taeda from Boland "in the Sierras" Specimen with very long male flowers & stout leaves.

Sp. from Chiswick has much more slender leaves – rather persistent scales or Bracts and a cone (terminal?) 2½ inches long, with sharp erect triangular prickly points (much like some of those on P. ponderosa from Boland from Mendocino? Check I had taken for resinosa?)

P. ponderosa – Sonoma, Boland a few rather long and slender leaves only — all the other specimens are from english or Florentine Gardens

P. insignis – Monterey, Boland, poor specimen from sh. – fruit (much smaller than the Californian) and Catkins fem. assilary (several verticils on one axis – from Hort Bibbiani

P. radiata which according to Parlatore is a variety, is here from Gardens, leaves much more slender

2/ Coniferæ Herb. Mus Floral.

Oct 15th exp. 1862

P. Lambertiana Douglas - Pollatore retained here a good full sized specimen - with scale flowers

P. Jeffreyi Murray - microscopic Royl - leaves long, common small, obtuse scales - much like a small sylvestris otherwise a little longer, more slender or also more tuberculed; - all resemble somewhat P. sylvestris - many forms under different names from Royl

P. patula with very slender leaves, only from Royl

P. Cembra Linn. numerous & good sp. without fruit from Kew

P. Montezumae Lamb. sp. from the Naples Garden with very long & slender leaves. numerous of Royl's forms

P. Pinea, cones present in many several - all terminal some with very slender leaves, e.g. P. elegans Royl

P. Halepensis Mill. most specimens have 2 leaves

The form named by Royl P. Laurii with terminal cone

P. aristata Engl. a single specimen - 2 fascicles from one

P. filifolia Lindl. from the Naples Garden without sheaths

P. Teiophylla Schied & Depp. short & long leaves; fruit terminal dwarf = stalks

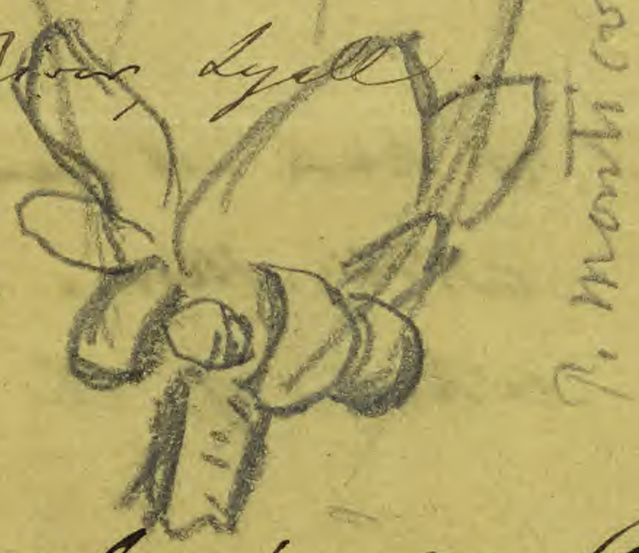
P. excelsa Bourton, Hookerf. specimen with young cone just growing; 4 - 5 shoots long - young shoots same length, leaves undeveloped yet - a few bunches of old leaves above the young cone - so that it is not quite terminal

P. Strobus, no native specimens

P. Montivola Dougl. Columbia River, Lyall

Leaves short, but Cone very large - see figure. Larger than any Strobus I have seen - seed rather smaller than P. Strobus

Some authorities sp. does not quite so large! no fl



P. monticola

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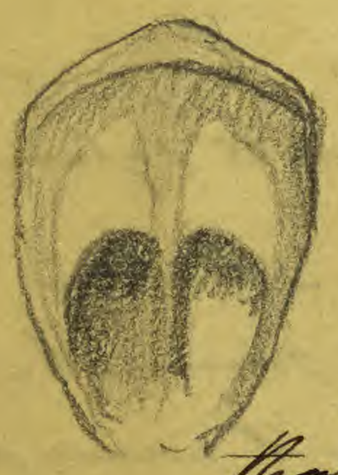
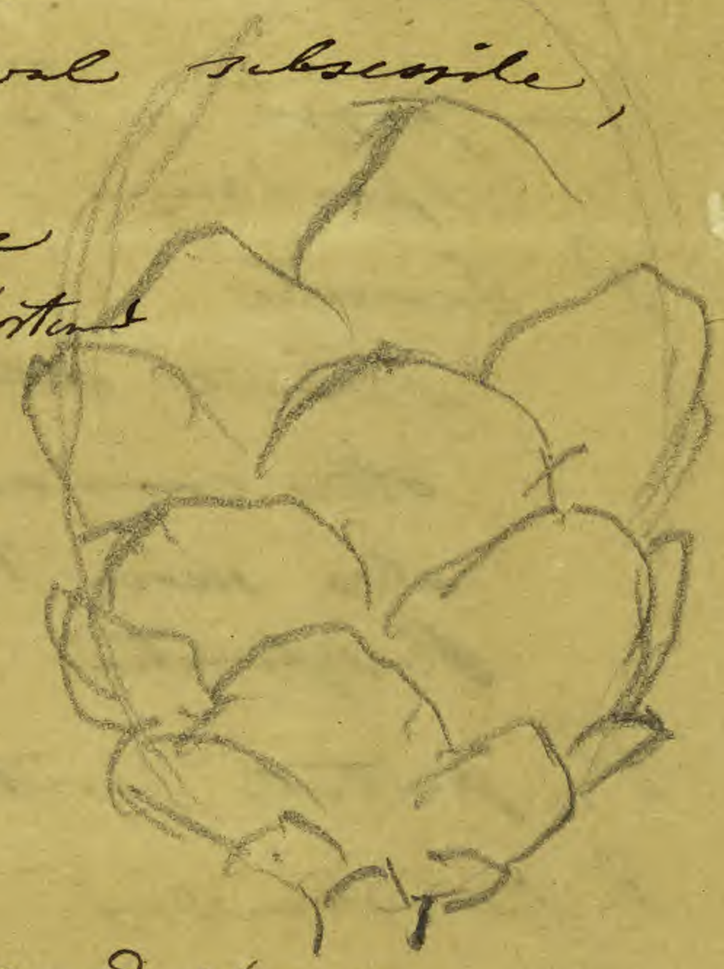
Pinus Lambertiana Coult. fl. specimen; no native of
Pinus parviflora Sieb & Zucc., Nippon, Perfetti leg
leaves 1/4 inch long, cones oval subacute,



Inside of a scale of Perfetti's cone, showing the cavity of the seed to have been larger than the wing; also showing that the free and spreading part of the scale is very narrow causes them to be a Strobus!



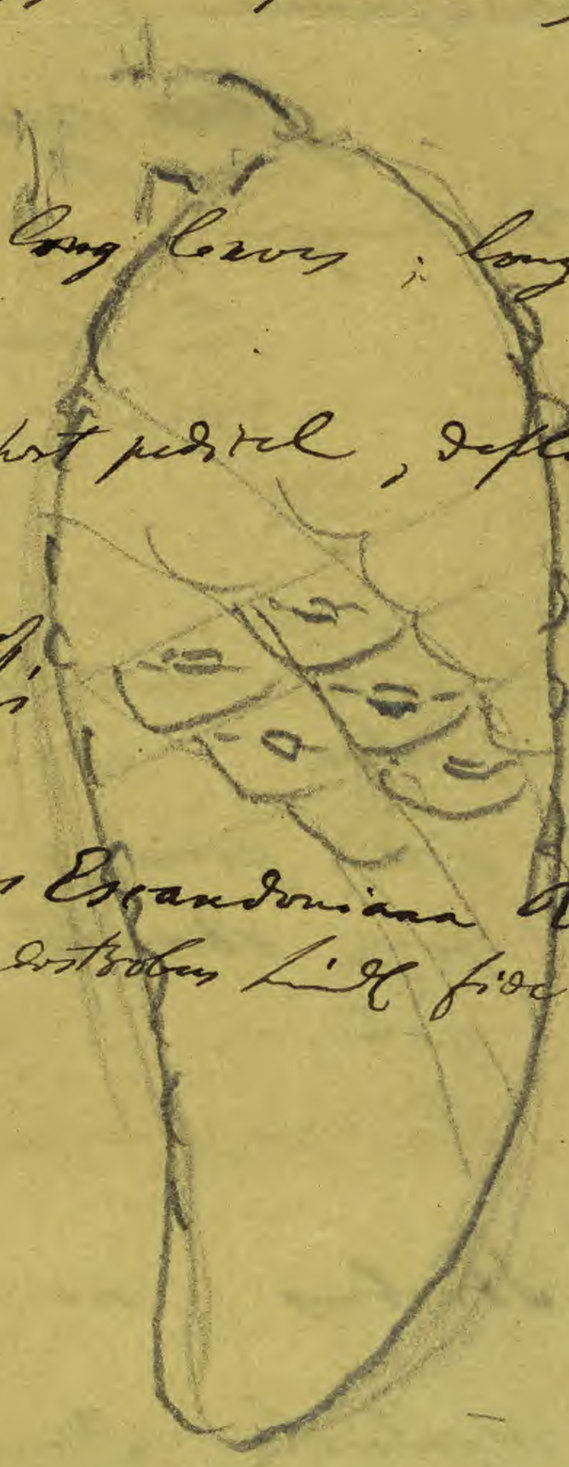
open cone like a shortened strobus

P. flexilis from Parry & Lyall, good specimens

—

Pinus coccinea Schiede — long sheaths — long leaves; long, somewhat persistent bracts

P. pseudostrobus Lindl Cone on short pedicel, depressed, closed, knobbed but not spinous — much like some of Jeppi's



Pinus Escandroniana Loesl
= Pseudostrobus Lindl fide Parlat

I have not seen any specimen of Pinus monophylla Torr. Mem. — what has become of it? and what of the specimen?

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Pinus Parryana is
given as the name of
Nuttall in the prog=
ress of
printing

Pinus

Florence 14-1866. Oct 1866

830 Fremont. Pinus edulis

P. Taeda, Wright, East Texas 1848-49 a good sp.
with grey fruit and with flex. annuals on
same axis — both terminal!

P. tenuifolia Hartweg — scales of cone reversed,
like many sp. of Tsuga Pattoniana

P. petula, Hartweg, cone & habit very close,
though ripe — scales almost without
protuberance

P. Cumminsii with terminal cone

294 M. Bridges, 1847 California seems P. contorta
cones falling in the eighth year

293 ..... same is Lambertiana

Plants coll. by Cranmore Wallace, 1848 in
Cooper River, So. Ca

lithographed labels

P. Taeda
North American Plants collected in the State of ....
by B. Matthews

lithographed label

also P. Taeda from Texas

618. Pinus Balfouriana Grev. Range of Mountains between
Shasta and Scotts River Lat 41° 50'
" So. Oregon 1854 "
" named by the Oregon Committee " "Greville"
is a short var of my P. aristata!

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11747

In Lamberts' work on Pinus P. rigida is correctly (named and) figured with Catenl cones

P. pinaster with a vertical of terminal fem. cones

A Pinus = Ab Aemilii, Ehrenberg, Arabis ? was named P. Halepensis; Parlatore corrected it to Pinus Pyrenaica; it has sessile short ovate cones — but cones and fem cones (roll = July) on same specimen are widely Catenl — low down!

Pinus Montezumae, fide Parlatore a form with rather short leaves and very short Cones Ehrenberg, Mexico ulter finxpara et las Vendas

N: 1085

other specimens have Large cones like this figure

P. Devoniana = P. Montezumae fide Parlatore
this is the Largest cone & less tapering, I have seen = thus Ehrenberg calls,

P. Ayacahuite, ovulata, Shrenberg has very cones but smaller only: & inches long — in these specimens leaves & Longer than usual, = others from same Locality the same

P Teocote Shrenberg, cones curved down — closed, not much larger than P. rigidas, and less knobbi — cones like Teda; cones apparently terminal

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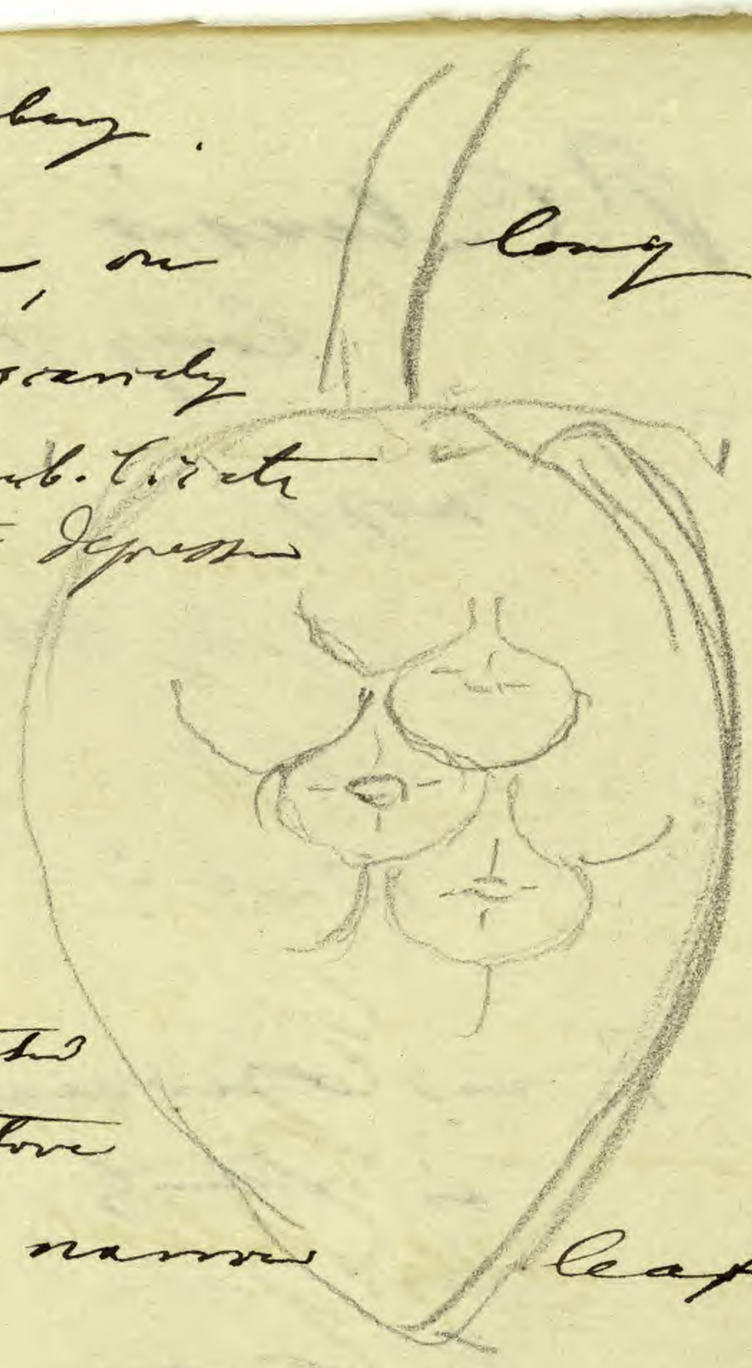
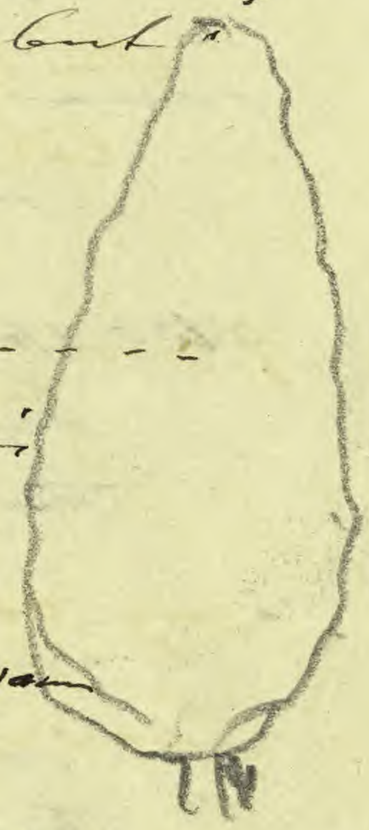
P. Pinus ponderosa, Pinaster, Chrysbay.

Cone very peculiar shape, or long
pedunculate; closed; scales scarcely
knobbed — with incurved, umb. tooth
with the knob in the centre of the depression



P. Pinus from Sitka, named on a printed
label P. inops — by Parlatore
P. Hudsonica, is probably a narrow leaved
P. contorta

P. Pinus Coulteri ! the original of Schiede is = mihi
of Gregg; cone terminal ! sheath deciduous
very soon —
N. 641 Hartweg so named is a very different thing.
Leaves 3 5 & 4 very sheaths very long, but
soon & very entirely disappearing —



P. Pinus Torreyana ! Orizaba, Schiede — — —
small cone, much like sylvestris

P. patula ! orizaba ! Hartweg
P. Coulteri ! " 642 & 643 the same

P. occidentalis, Sw. Oaxaca, Schaubergh
small terminal recurved cone, with strong
prickles, curved upwards

P. leiophylla, Schl. & Cham. Mexico, Zacatecas, Hopkirk
Plantas Cumbrinas

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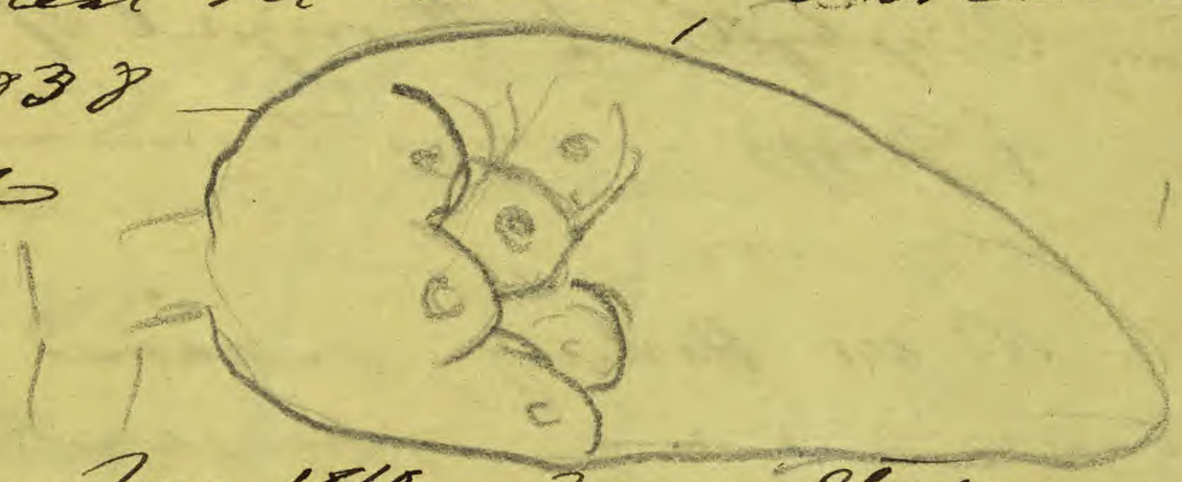
P. Cubensis, fro Franqueville, Cuba very
long petiole auct
" P. insops " P. Hudsonia fide Baker
Rocky Mtns, Bourgeau, Allisen Exp.
1859 is probably correct —
What is, however, the difference between the
?

P. minus d'Lavrana, Mexico, Ehrenberg
is certainly = Cumbodia as I understand it —
leaves much more slender than in edulis —
— Small cones, young; leaves 2 or 3
P. Tecorote Rest del Monte, Ehrenberg
Oct 1838 —



Cones terminal
pedunculate
nearly smooth

same — Ehrenberg, Jan 1840, Jamaltepec; —
very similar, cones same, but smaller

Three specimens, 5 leaved, Ranked by Parlatore P. Ceriophylla
have the same cones nearly exactly and shorter leaves
than Ceriophylla. — Hartwegii fol. gracilioribus?
Tecorote fol 5 ?
Ceriophylla fol. rigidioribus ?
cones same size, knobs a little more prominent
than in the above — Hujalate to Rest del Monte
Oct 1838

P. patula N. 625 — has extremely fine leaves — 3
cones similar to both the last only less knobbed the leaves
apparently persistent on Hujalate Oct 38

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Apl 23 1865

Pinus pinea has wings extending beyond the seed only abt $\frac{1}{3}$ or even $\frac{1}{4}$ the length of the seed.

P. Sabiniana, abt $\frac{1}{2}$ the length of the seed.

P. Torreyana. Same

P. Coulteri abt the length of the seed itself, or longer

The wings of P. pinea are very thin but those of the three California Pines are considerably thickened, where they seperate from the seed itself.

[illegible] among the allied Pines

cm
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Leitch & Carlies

DRUGGISTS

South-west Corner Fifth and Market Streets

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11798

P. mex Montezumae ♂ ♀ terminal

Lei ophylla ♂

aristata ♂ ♀ term.

Greggii ♂

– pilula ♀ = nigrida!

– Schiedeana ♂ to grey

– pendula Wilz ♂, ♀ terminal

Fauda Ley ♂

Urzi ♂

? Mobile ♂

Canescens ♂

Chihuahua ♂ ♀ = ~~nigrida~~ term

mitis ? Alabama ♀ = nigrida

Guatemala ♂ ♀ = nigrida ostreaceo term!

– glabra ♀ terminal (or subterm ?)

– muricata ♂

– contorta ♂ ♀ terminal (always ?)

– pilularis Cuba ♂

– Parishii ♂ ♀ term

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11799

Enno Sander,

Ecke der Zweiten und Walnut Straße,

unter Barnum's Hotel,

Saint Louis, Mo.

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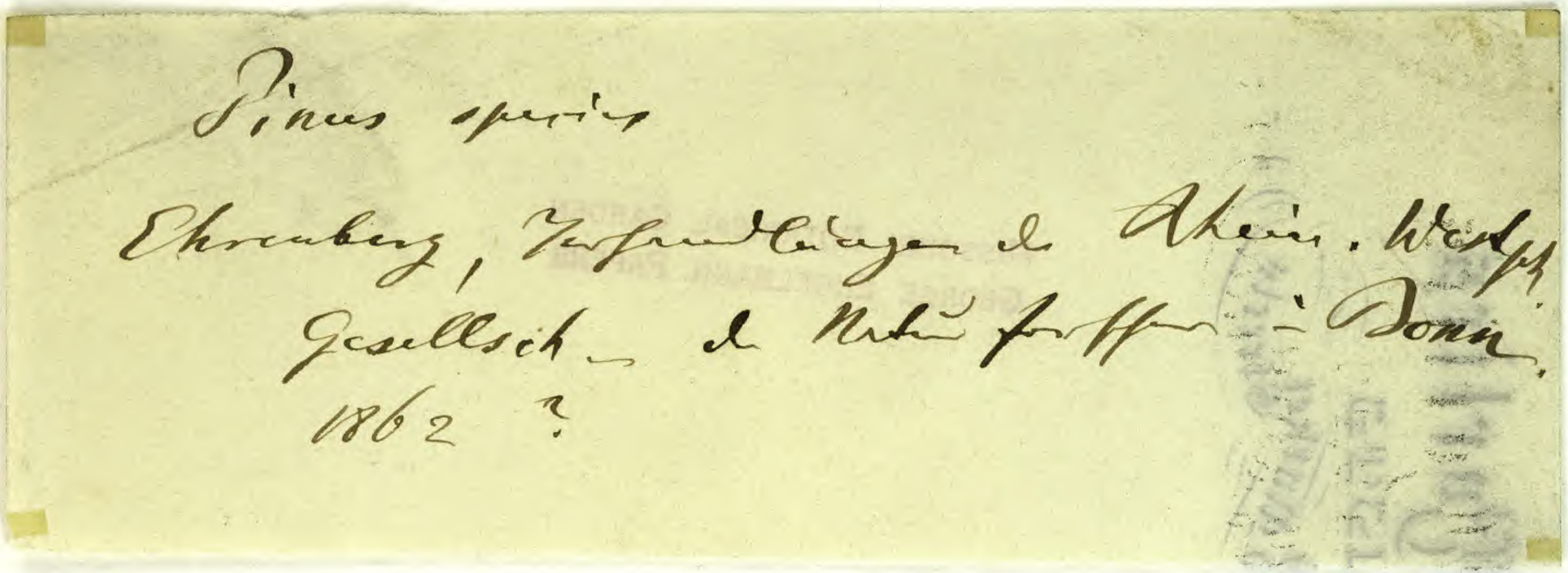
Pinus species

Ehrenberg, Jahresversammlungen d. Rhein. Westph.
Gesellsch. f. Naturforschung. Bonn.
1862 ?

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11800

Missouri Botanical Garden
George Engelmann Papers

Rec April 5th 78

1

New Haven April 3rd 1878

My dear Dr. Engelmann

I here send some volumes of my field notes, as taken - and on the following sheets references to the Oaks & Coniferae, so far as caught in a hasty running over them - Should they reach you with any charges, please let me know and I will repay them.

11801

normal

Balfouriana Mt Whitney flexilis
aristata Cembra
excelsa Parryana
Pence

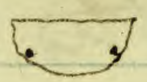
rare exceptn

flexilis, montana
albicaulis nevadensis
Cembra Lamadena

rare exceptn

aristata & Pitch Pine

cembroides



edulis
resinosa
Sabiniana

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P. Winchesteriana — Hor. 25 1869

Pinus insignis — i P. muricata

P. Teocote

P. Canariensis

in Hort Thuret, Antibes, from
adventitious buds from the trunk.

11802

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Pines of Southern Coast
near the Equator

23. P. insularis, Philippine Islands
24 P. Kasya
25 P. Longifolia } Himalaya Tropics
51 P. Khasyana } Guatemala
52 P. Teocote }

11803

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302
05 -38

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P. ponderosa edulis and A Douglasii
plenty. La Plata Mountains SW Colorado
T. C. Porter 1875.
"A. concolor or grandis in
abundance. On the Piedra
A grandis? covers whole Mountain

7 Asclepias hirsuta
8 Lygodesmia aphylla
9 yes Lechea major
10) Allionia glandulosa
11)
12 yes Gnaphalium purpureum
13 yes Oenothera
14 Yes Gerardia pedicularia
15 Euph commutata

Evolvulus argenteus

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11804

Rec'd Sept 24
26

F. C. HEGELER, Pres't. OFFICE OF F. W. MATTHIESSEN, Sec'y.

MATTHIESSEN & HEGELER ZINC CO.,

SMELTERS OF SPELTER,

AND

MANUFACTURERS OF SHEET ZINC.

La Salle, Ill., Sept 22 187[illegible]

Lieber Herr,

[illegible]

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Strobus
Picea
flexilis
Contorta
flexilis
Balsam

Albicaulis
Contorta
flexilis
Montana

edulis
Contorta
ponderosa
Resinosa

monophyll

Montana
nigra

austriaca

Elliotii

Picea

1805

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Nevada - Aug. 11. From Big Meadows to Mecamo, over the foothills.
1863
Brewer's notes
White regions are open forests of Pinus Sabiniana,
P. Lambertiana & P. ponderosa. Some Q. Kelloggii, &
Aug. 15th. Camp to Silver Lake, 7,400 ft. alt. - The Q.
Kelloggii continued much of the way.

11806

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Kew Museum Sept 10 1869

Pinus ponderosa — 2 or 3 varieties? Oaxaca & Mazatlan

Knobby or almost smooth — all identical

P. flexilis var brachyptera Lyall Aug 1862 Detroit N Am.

contorta sens

P. flexilis Bourgeau, the usual form — Parry's ones are from Gray similar

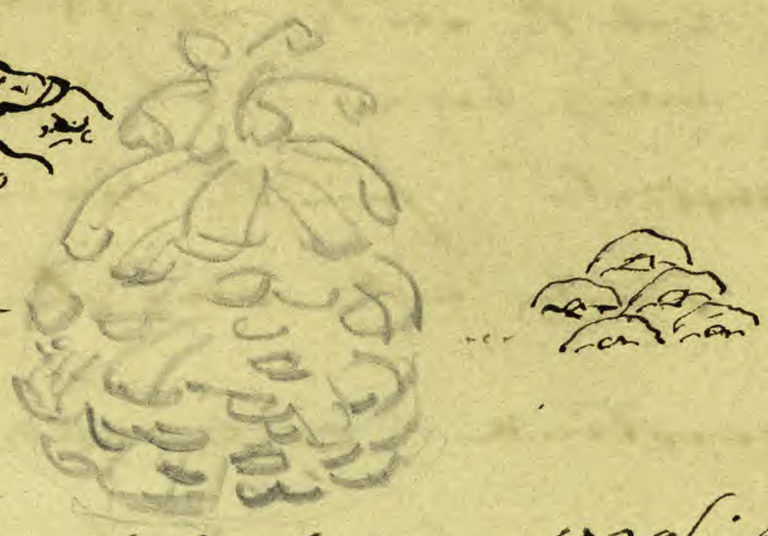
P. australis

P. contorta Larger and smaller, more or less knobby or spiny — apparently apical — more or less oblique — Bridges Sinkley coll by Bourgeau and Lyall, 740 Jeffrey — Douglas etc

P. calamis 3189 Wright with seed Prof Austed's is the same

P. calamis Wright 578 → 3190 & 3190

P. calamis, Clarity

smaller cones, scales recurved in age w and brown very resinous 

P. radiata San Juan Mts, Zepir; St Sinclair 1859 (= Oaxaca 463 M Shaft)

very oblique — 10 cent long, undistinguishable from the Monterey (as. gris — is it really from Zepir? — The leaves with the cones and is St and Calif to the Montezuma order.

P. insignis = radiata Calif form. Some extremely oblique ones — others scarcely so at all — but rare —

P. pungens

P. aristata

P. pseudostrobus — P. ca. scopari Regl seems the same — cones a little smaller

P. ponderosa Puget Sound, Nesqually

Cones 20–25 cent long cones usual form, 10–11 cent long — Ltr from name Benthamiana

P. resinosa

P. caryophylla from Gregg, Libon, Seeman, Hartweg

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P. virens patula Large and small from different sources, —
same as my Grays & Berlin specimens

P. Fendleri no good specimens — yes, from Gray.

P. — — ? Bakaalka. 7–10 cent long, slender
perhaps nearer Edulis is 3(89 Wright
no spec. in Hort.?

P. Orata, Royle, no cones only leaves, in 5's, 25 cent
Long — Montezuma — like

P. pseudo Royle cones oval 7–8 cent long, like the small
Montezuma

P. tuberculata 14–15 cent long! from Messrs Veitch
but the seeds 20–23 mm long Saidapet cones from Jeffrey, do not
belong here —, but most probably to Coulteri (or Lambert.?)

P. macrocarpa from the same cones shorter, more oval, with
short and very stout prickles

P. serotina, oval short cones
one, so labelled, from Nuttall in P. resinosa

P. tæniifolia has the general character of the Montezuma
group — long slender scales but small — scarcely knobbed
5–6 cent long character of spines same as in Montezuma

P. Chihuahua

P. Llaveana

P. Sabiniana (closes to entrate). Bourgeau 17/12 1859
3 generations of 3 cones each on this specimen, apical appendage
horizontal, not recurved, more the usually knobby
prickles where not broken sometimes very long

P. Banksiana Bourgeau 2 Sept 1859 Saskatchewan near Fort Carlton
[Does the label belong here or to Cost?]
recurved prickles, which are soon lost. — ♀ catkins — with very short

P. Fremontiana (monophylla) Calif. very large cones
8 cent long, nearly 6 ⌀ diam.

P. Jeffreyi ! Cones 18 cent long

P. mitis
P. Ponderosa } Royl. cylindric cones, 16–18 cent long
mitis more knobby than the other.
both. Light brown & strongly knobbed,
& obtusely strongly prickly
apophysis thumb⌒

P. Montezumae cylindric 10–15 cent long — thumb⌒
flat scales — only one line of the spirals distinctly
continued, the opposite one interrupted. here the 8 spirals
are distinct & plain, but the 13 & still more
the 5 are zigzag, the latter even difficult to follow
Another, or labeled, is only 7 cent long, oval —
scales the same
Liebmann & Puebla is same as former

P. Teocote good cones & seed

"P. macrocarpa" grows in England are 15 cent — length
hooks strongly turned up

P. Coulteri ⌒ild

P. Sabiniana were confounded, & really not easily
kept apart a cone presented by Nuttall as
P. Sabiniana seems to be Coulteri
The native Coulteri are more elongated light yellow brown
(the cultivated Macrocarpa short & oval)
Sabiniana oval, brown, much deeper than the
other

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618 Jeffrey, P. Balfouriana 18 cent long, 3 – diameter
shape of Strobus!

P. Montezuma cult – Leyland, cones 17 and 18 cent long —
longer than any native I have seen
but one from British Columbia is over 22 cent long
Dr Lyall & Howes sound

P. Lumholtziana

P. Ayacahuite 20–35 cent long, especially some rolled long
by Royle Don Pedrii – Liebman Chiantla pr Pueblo
is very slender, 40 cent long, apophyses small, cone
therefore only slightly squarrose!
Ayacahuite & Bourgeoti are the same for Royle

705 Jeffrey Oct 9. 1852 is tuberculata

Pinus No 1. Chiantla pr. Pueblo Liebman looks like
P. Engelmanni

Pinus Ludwigii N. Mex. one cone the other only 5 cent long
P. ponderosa? but with short and stout prickles

cabled to Mallon 1886
the Cañon 1887

Pinus 2 & 5 Oaxaca Liebman belong together
with prickles & Devoniana Royle – see above
but is not mature
Groggs cone belongs here too & and an abnormal Mexican
one, the largest of all these 30 cent long – the smallest
is Liebm 5 12 cent long scales as in Montezuma

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Rep Parkinsii Cotter, Aug 1875 March 76

Type of most 3 leaved Pine leaves (of 3 more) ponderosa

rigida Jeffreyi Russelliana Montezumae

Type of P. australis P. Cubensis P. Elliottii occidentalis

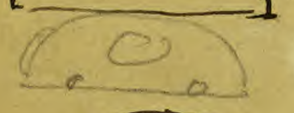
sylvest

the only Asiatic that belongs here

resinosa sylvestris taleyensis Banksiana

all Strobus & cembroides Pumilio

Strobus Cembra Pumilio



resinosa

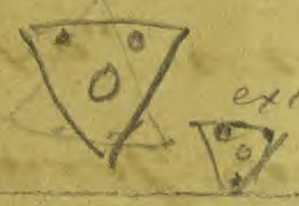
contorta Banksiana, ropo glabra mitis Laricio

ponderosa

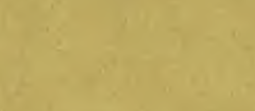
Laricio

insignis (= insignis = contorta

a virgle dent ÷ obtusa & alba rea ÷ albicaulis !



excelsa pumila flexilis Strobus Cembra



resinosa

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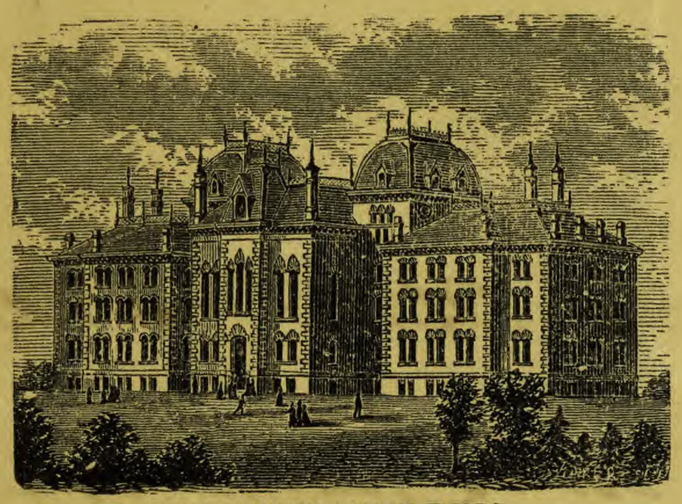

THE NEW BUILDING.

University of Kansas.

Lawrence, Kansas, April 4th 1878.

Dr. Geo. Engelmann,

Dear Sir:

May I ask you to do me the favor of examining the enclosed grass and if you can determin it- send its name upon the enclosed postal. It was sent to me as a grass "exceeding all the grasses for winter growth" sent by a farmer who thinks it may prove of value for cultivation.

Very Respectfully Yours

F. H. Snow

Prof. Nat. History.

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Rec'd Cambridge Sept 24
" New Haven Conn.
Sept 29 " 1879

My Dear Dr Engelmann

I have been
out of Town, so that your
of the 28th was rec'd on my late
last evening and I hasten
to answer it as well as
I can from memory, as
I can lay my hands on no
notes.

P. Sabiniana is a much
more common tree than P.
Coulteri, has a much
wider range, and is
vastly more abundant.

It is emphatically the
pine of the dry foot hills,
and extends all along
the foot hills of the Sierra
Nevada and is also
common in the Coast

11809

Ranges. - It is usually 40 or 50 feet high, much branched, the branches sprawling and open. The tree has an open habit, the foliage lacy, but rather coarse and stiffish, so that the tree does not cast much shade, the bark is smooth-green when young in mass, the dark cinnamon-
much pressed in small depressions, rough - The head is irregular but rounded or roundish, not flat-topped like the Italian - pine of Europe, nor conical like the P. contorta, nor cylindrical, like P. Lambertiana, but an irregular, open, head. The trunk sometimes 12 or 20 ft in diameter, 1½

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It is called "put-Hilo-pine"

P. Coulteri is very like it in habit, the foliage is longer, and lower, - it is a P. Balfouriana intensified, but my impression is that it runs average, & each so large, 18 inches in diameter and 50 feet high, and he a rather large tree, 2 feet diameter, and 60 ft high crowned he for the P. balfouriana.)

In P. Jeffreyana, the foliage is also tufted, & a darker green, the bark cracks in immense plates, I have often a pint and I have measured that much more about the base of the stem, the tree often 200 and sometimes 300 feet high in diameter, very straight,

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4 making magnificent timber. The bark of the tree is more conical than P. Lambertiana yet in large trees not very strikingly conical. I have seen trees 8 & 9 diameter & heard of one 14 feet.

East of the Sierra Nevada, on its Eastern slope and about Lake Tahoe &c, it is ~~replaced~~ replaced by what I always thought a variety of it; the P. Jeffreyi the tree not so tall, head broader, bark more rugged, deeper fissured with much smaller plates. The cones larger - the foliage rather darker in color. Here (Utah?) trees are known as Colfax or Pitch Pine -

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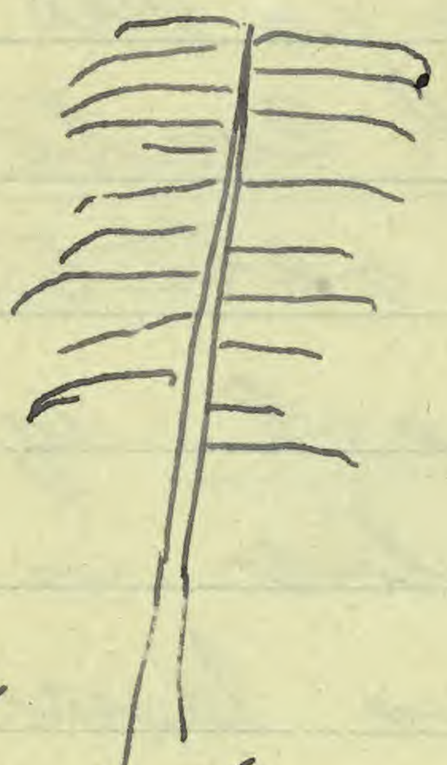
P. Lawrenceana, the sugar pine, has been often described - I have seen trees over 300 ft high and 8 or 10 in diameter. The head may be called cylindrical, the lower branches drooping

Thus — —



the leaves are pendant from the ends.

The bark is broken, finally into square divisions, which the plates are red, the color of the bark is brown.

The most marked difference between this and Pinus of Europe, as they struck me are this, — in Europe the trunks draped nearer the tip, and tended to

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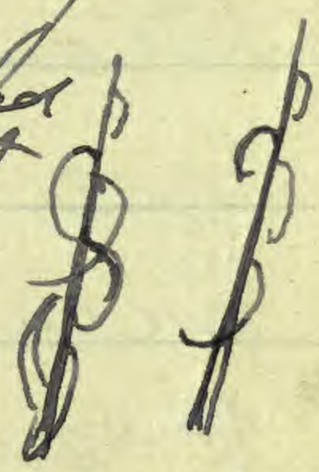
become more horizontal outwards, thus —

while in California they started out straighter as dotted lines, & which the most marked species is the Pyrus Sitch. In P. Contorta of the higher altitudes, (the Adamanock of the natives) the habit is conical, the leaves hanging in ~~rising~~ rising, thus

or

but when ~~a limb dies~~ branches die & twist about, in strange curves. depend ~~upon~~ upon the trunk - thus, —



only even more so —

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The Monterey Pine (P. radiata, I think it is) grows to a rare tree high. When young, the central shoot is often of great length above the branches, I think I have seen 5 or 6 feet thus naked of branches. It is also of very rapid growth. At Stanwyn near Monterey which I took to be of this species, had annual rings of an inch, (as I remember it) many made a growth of wood (exclusive of bark) of 18 inches in diameter in 8 years, if my memory is to be trusted in the matter.

P. tuberculata, I am not so well acquainted with. I never saw it to recognise it, that I can now remember, where it was more than a very small tree, 20 ft high a

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less.

In California, where everything is so variable, it is possible that perennial individual trees of Palmiers a Coulter may attain the dimensions you have cited, 100-150 feet - but my recollection of the trees are as I have given them - & is possible that I have underrated their size from getting them dwarfed beside the stupendous conifers of that state.

Yours truly

J. W. Brewer

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Pinus

922-938

Notes

Pinus Lin gen ed I. no 731

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Ranunculus aconiti L. folius L
huc. R. platani folius L.
heterophyllus
dealbatus

Spr II, 650
RII, 31

Alpestria Europ.-med.

In Tauno hic inde
Bacharach 1826

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